

Work Order ID 153312-15
Tuesday, November 15, 2016 2:53:33 PM

153312

Page 1

Item ID: 647.1601

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Wiper Deflector Aft

Stop *NS2*

Start Date: 12/5/2016 **Start Qty:** 6.00

~~*6*~~

Cust Item ID:

Required Date: 12/8/2016 **Req'd Qty:** 6.00

6

Customer:

Reference:

Approvals: Process Plan: VS IN Date: 16/11/18

Tooling:**Date:**

Run Start *NR1*

QC: _____

Date:

SPC (Y/N):

Date:

Stop *NR2*

[illegible]

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____			

Work Order ID 153312

Tuesday, November 15, 2016 2:53:33 PM

153312

Page 2

Item ID: 647.1601 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Wiper Deflector Aft
Start Date: 12/5/2016 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 12/8/2016 Req'd Qty: 6.00 ***6*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Identify as per dwg & Stock Location: SC054	0.00							
140									
Packaging	Memo CCK091	0.01							DAS 26 9-89
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								
150	QC21- Final Inspection - Work Order Release	0.00							
150									DAS 21 9-89
QC	Memo	0.10							
Quality Control									

DAS 21 9-89

DEC 19 2016

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
					QC / QA Coordinator Approval				
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Tuesday, November 15, 2016 2:53:39 PM

Page 1

Work Order ID: 153312

153312

Parent Item: 647.1601

647 1601

Parent Item Name: Wiper Deflector Aft

Start Date: 12/5/2016

Required Date: 12/8/2016

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV:A 12.10.04 NEW ISSUE DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
647.1611 *647 1611* Wiper Deflector, Aft		Manufactured	No				Each	1.0000		6			
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					CCK091			1					
					148293			1					
647.1612 *647 1612* Splice Plate		Manufactured	No				Each	4.0000		12			
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					CCK108			4					
					151467			4					
NAS1149FN832P *NAS1149FN832P* Washer		Purchased	No				Each	1,463.000		36			
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					GA			1285					
					M135058			1285					
					ST263			178					
					M135603			178					
MS21042-08 *MS21042-08* USE MS21042L08	MS21042L08	Purchased	No				Each	0.0000		18			
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			

**

5X

DAS
6 DEC 05 2016
9-89

**

8 X 152493

DAS
6 DEC 05 2016
9-89

**

DEC 05 2016
DAS
6
9-89

**

135948

DAS
6 DEC 05 2016
9-89

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____			

Picklist Print

Tuesday, November 15, 2016 2:53:39 PM

Page 2

Work Order ID: 153312

153312

Parent Item: 647.1601

647 1601

Parent Item Name: Wiper Deflector Aft

Start Date: 12/5/2016

Required Date: 12/8/2016

Start Qty: 6.00

Required Qty: 6.00

MS27039-08-13

DAS
30
9-89

Purchased

No

Each

124.0000

18

MS27039-08-13

Screw

DAS
6
9-89

DEC 05 2016

Location

Loc Qty

Loc Code

ST278

124

123352

24

124326

100

M 124326

(18)

~~18~~

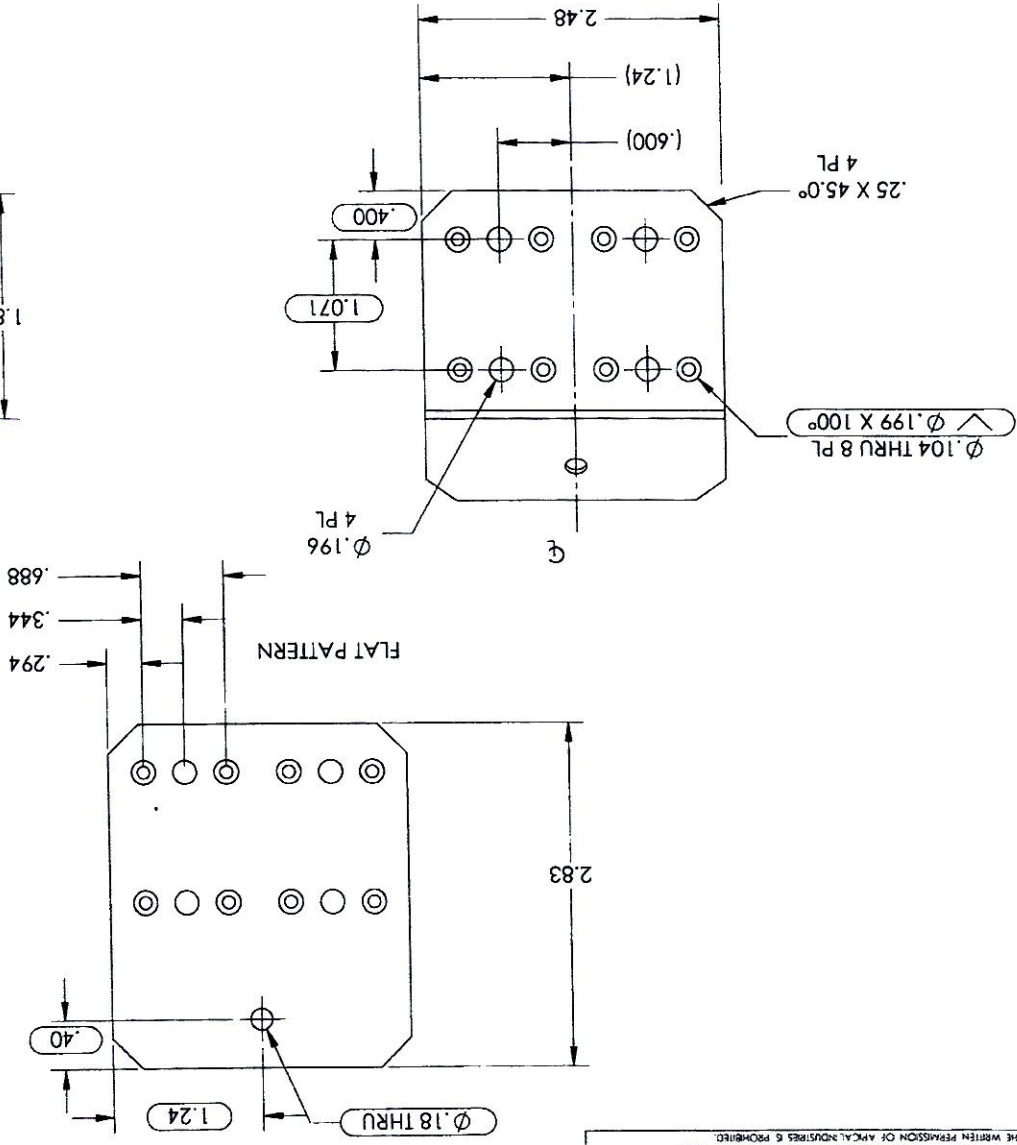
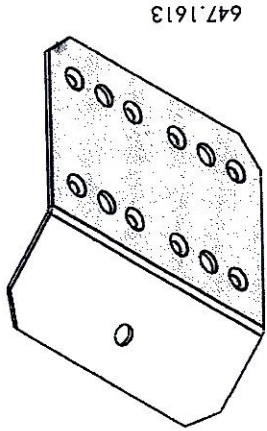
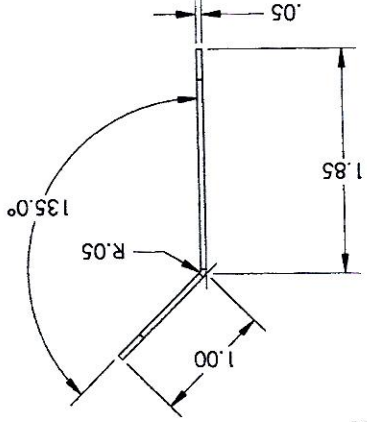
DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

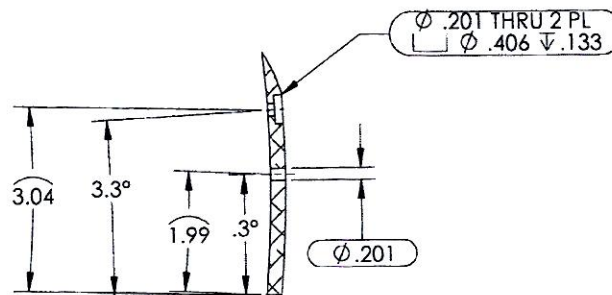
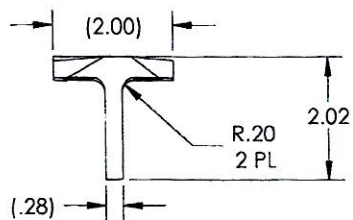
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____			

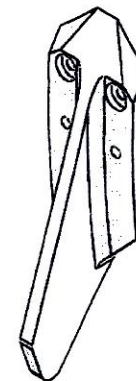


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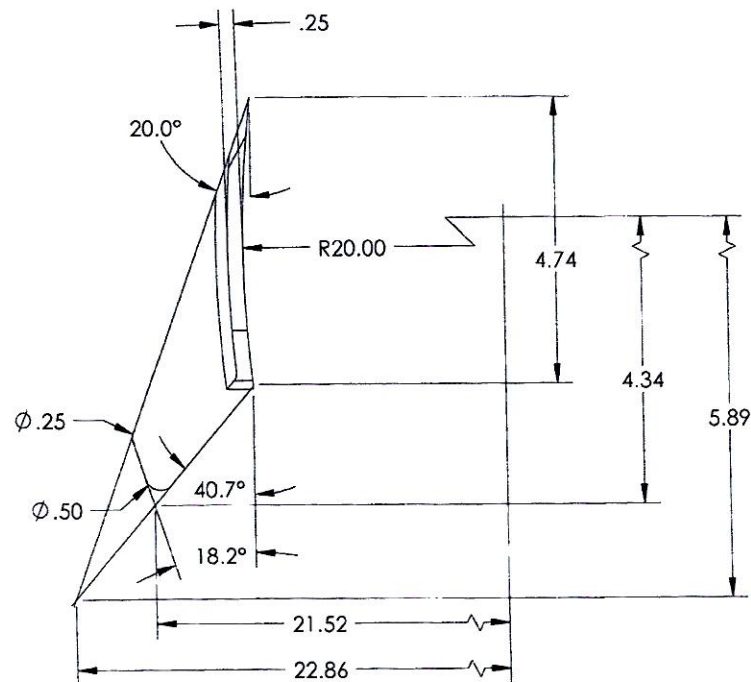
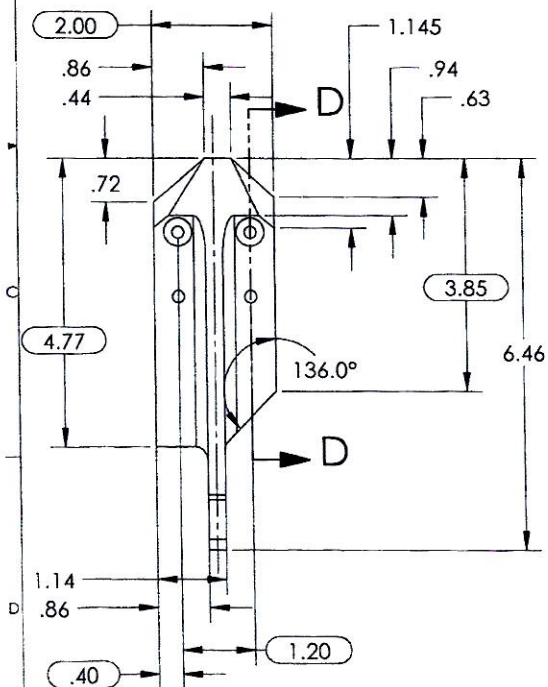
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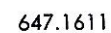
SECTION D-D



647.1610

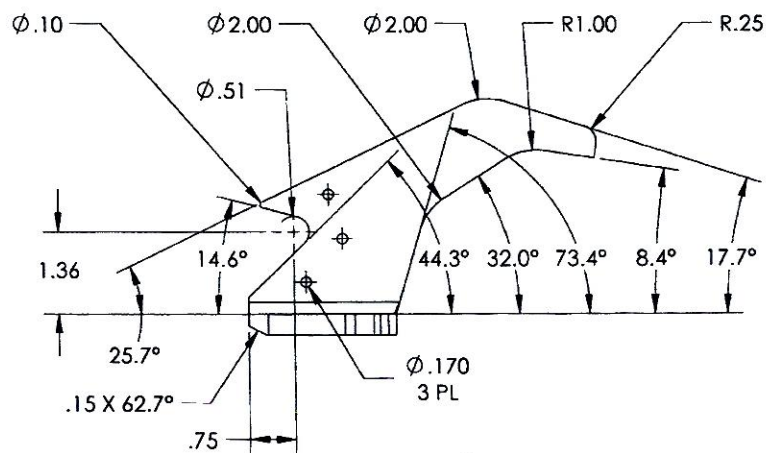


ORIGINAL DATE MOD. 181 06-00		APICAL INDUSTRIES	
DRAWN BY J. GARDNER		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
CHECKED BY P. BRAY		WIPER DEFLECTOR ASSY	
DRAWING APPROVAL P. BRAY		SCALE: NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ARE 2 PLACE DECIMALS ± .01 1 PLACE DECIMALS ± .005 ANGLES ± 5°		SHEET 2 OF 6	REV. A

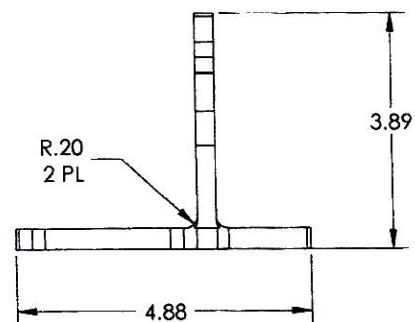
[illegible]

ORIGINAL DATE 11/04/04 VPI 10-1009 DRAWN BY J. GARDNER P. BRAVO DRAWING APPROVAL P. BRAVO CONTRACT NO.	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760) 724-5300 WIPER DEFLECTOR ASSY												
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1. PLACE DIMENSION D: 3 PLACE DECIMAL 1.000 2. PLACE DECIMAL 1.000	<table><tr><td>SER</td><td>CAGE CODE</td><td>QTY</td><td>REV</td></tr><tr><td>B</td><td>07M76</td><td>647.1600</td><td>A</td></tr><tr><td colspan="2">SCALE: NONE</td><td colspan="2">SHEET: 3 OF 6</td></tr></table>	SER	CAGE CODE	QTY	REV	B	07M76	647.1600	A	SCALE: NONE		SHEET: 3 OF 6	
SER	CAGE CODE	QTY	REV										
B	07M76	647.1600	A										
SCALE: NONE		SHEET: 3 OF 6											

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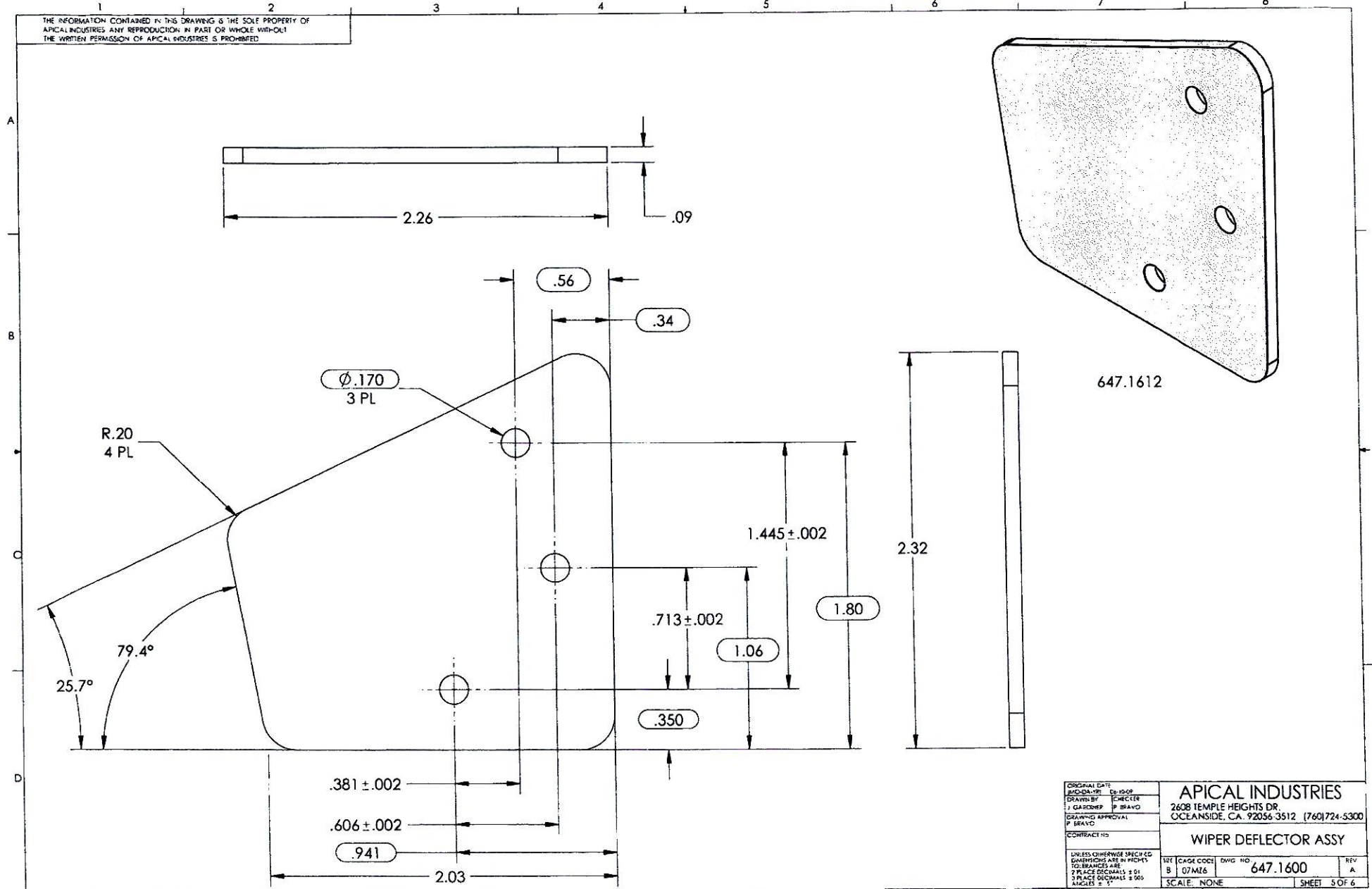


SECTION E-E $\frac{3}{B4}$



ORIGINAL DATE APR 04 1991		APICAL INDUSTRIES	
DRAWN BY: P. BRAYO		2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL: P. BRAYO		OCEANSIDE, CA. 92056-3512 (760) 724-5300	
CONTRACT NO.		WIPER DEFLECTOR ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SIZE: B	REV: A
		CAGE CODE: 07M26	DWG NO: 647.1600
		SCALE: NONE	SHEET 4 OF 6

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ORIGINAL DATE 2000-04-18 BY: JSP		APICAL INDUSTRIES	
DRAWN BY: J. GARDNER		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: P. BRAVO		OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVAL P. BRAVO		WIPER DEFLECTOR ASSY	
CONTRACT NO.		647.1600	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 ANGLES ± 1°		REV A	
SIZE B	CAGE CODE 07M16	DWG NO. 647.1600	SHEET 5 OF 6
SCALE: NONE			

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 04229				SHEET 1 OF 1	
	DWG NO. 647.1600	REV: A	PREPARED BY J. SOTO	DATE: 11/11/2013	EFFECT ON DWG ☐ INC. ☒ UNINC.	
	DWG TITLE: WIPER DEFLECTOR ASSY					
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>David Barber</i>	QC <i>[Signature]</i>	EFF. NEXT ORDER		
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: REVISED F/N 8					ECR: 13-032

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 15336

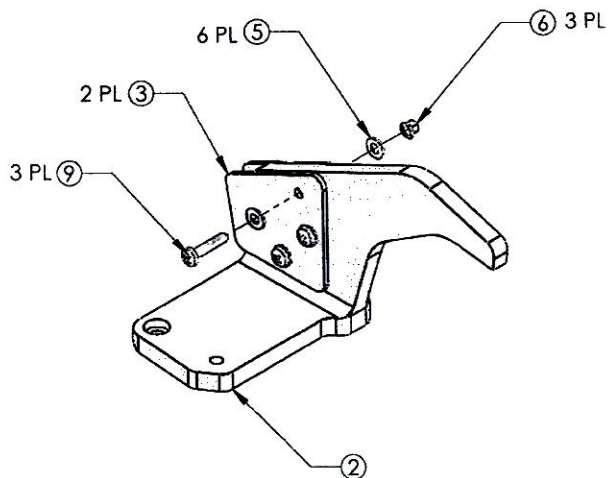
Vee
6/2
6/11/15

8	R	601.2207	8		NUTPLATE RIVET	CCR265SS3-3	
F/N	TC	PART NUMBER	.1602	.1601	DESCRIPTION	MATERIAL	SPECIFICATION
			QTY				
DOCUMENTS EFFECTED:					CHANGE CATEGORY	DER REVIEW REQUIRED	
☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☒ BOM					☐ MAJOR ☒ MINOR	☐ YES ☒ NO	

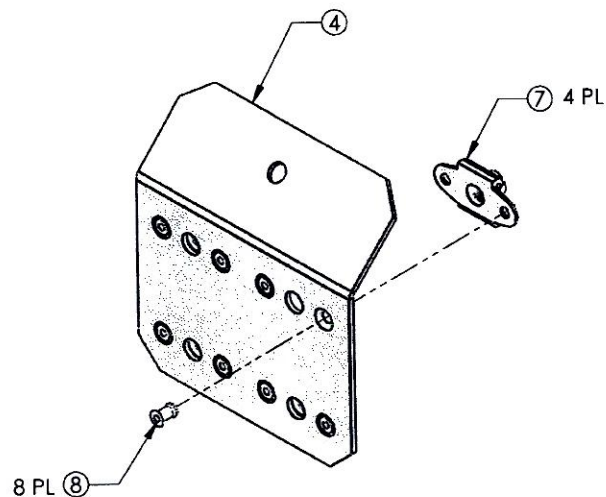
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NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 AMS-QQ-A-250/12
- 2 MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4
- 3 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
4. DEBURR AND BREAK ALL SHARP EDGES
5. IDENTIFY IAW MPP-120



647.1601 SHOWN EXPLODED



647.1602 SHOWN EXPLODED

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
7	LAST PROTOTYPE REVISION P01		N/C
N/C	INITIAL RELEASE	06/10/09	P. BRAVO
A	INCORPORATED ECN 04043	08/29/13	P. BRAVO

UNINCORPORATED ECN(s)

04229,

	3	9	601.2989	SCREW	MS27039-0812	
8		8	601.2980	NUTPLATE RIVET	CCR26455-3-04	
4		7	601.1900	NUTPLATE	MS21059-3	
	3	6	601.2973	LOCKNUT	MS21042-08	
	6	5	601.2764	WASHER	NAS1149FN832P	
1		4	647.1613	DOUBLER	2	3
	2	3	647.1612	SPLICE PLATE	2	3
	1	2	647.1611	WIPER DEFLECTOR, AFT	1	3
		1	647.1610	WIPER DEFLECTOR, FWD	1	3
X			647.1602	DOUBLER ASSY		
	X		647.1601	WIPER DEFLECTOR ASSY, AFT		
1602	1601	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.
QTY			PART'S LIST			
NEXT ASSY (S)			APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300 WIPER DEFLECTOR ASSY			
647.1300						
			UNITS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°			
			SIZE CAGE CODE B 07M26		DWG NO. 647.1600	
			SCALE NONE		SHEET 1 OF 6	
					REV A	